

Emission Summary

Permit Number: 968064P

Source Status: New ☒ Modification ☐ Expansion ☐ Relocation ☐ Permit Status: New ☒ Renewal ☐

PSD ☐ NSPS ☒ NESHAPs ☒ Previous Permit Number: Construction _____ Operating _____

	Pounds/Hour			Tons/Year				Date of Data	*	Applicable Standard
	Actual	Potential	Allowable	Actual	Potential	Allowable	Net Change			
PM**			0.05			0.01		12/2/13	1	1200-03-06-.02(2) 40 CFR part 60 Subpart IIII
SO ₂			neg			neg		12/2/13	2	1200-03-14-.03(5)
CO**			0.61			0.15		12/2/13	1	1200-03-07-.07(2) 40 CFR part 60 Subpart IIII
VOC**			---			---		12/2/13	1	1200-03-07-.07(2) 40 CFR part 60 Subpart IIII
NO _x **			0.57			0.14		12/2/13	1	1200-03-07-.07(2) 40 CFR part 60 Subpart IIII
HAPs					neg	na		12/2/13	3	
CO ₂ e					21.2	na		12/2/13	5	

The above emission data are from emission test results required by the EPA's engine certification program. The SO₂ emissions were calculated using 15 ppm sulfur content of the fuel (NSPS requirement), assuming all available sulfur is converted to SO₂

* Source of data codes are found on the back of form APC-20.

** The allowable emission limits are subject to 40 CFR part 60 Subpart IIII. This emergency engine must meet the emission requirements in §60.4205(b) & §89.112, Table 1, Tier 3. The applicable standard for NO_x is in terms of NO_x + NMHC. Therefore, the allowable VOC emissions are accounted for in NO_x.

PERMITTING PROGRAM: JEF DATE: 3/6/2014

City of Bradford - City Hall

27-0239-01/968064P

74 horsepower diesel-fired, emergency generator engine.

Model	Model yr	br-hp	KW	MMBtu/hr	NSPS regulation (40 CFR X)	MACT?
John Deere 4045TF290	2013	74	55	0.518	89	YES

Potential to emit (at 500 hr/yr)

Pollutant	Factor (lb/hp-hr)	Factor (gm/kW-hr)	Emissions (gm/hr)	Emissions (lb/hr)	Emissions (tpy)
PM		0.29	15.95	0.04	0.01
NO _x + NMHC		4.6	253.00	0.56	0.14
CO		1.2	66.00	0.15	0.04

Spec sheet from John Deere indicates the engine is certified Tier 4 interim

Emission factors from CARB certificate

Allowable emissions per engine, 40 CFR 89.112

Pollutant	Standard (gm/kW-hr)	Emissions (gm/hr)	Emissions (lb/hr)	Emissions (tpy)
NMHC + NO _x	4.7	258.5	0.57	0.14
CO	5.0	275	0.61	0.15
PM	0.4	22	0.05	0.01

HAPs totals from diesel combustion

	lb/MMBtu	tpy
Benzene	9.33E-04	0.0001
Toluene	4.09E-04	0.0001
Xylenes	2.85E-04	0.0000
Propylene	2.58E-03	0.0003
1,3 Butadiene	3.91E-05	0.0000
Formaldehyde	1.18E-03	0.0002
Acetaldehyde	7.67E-04	0.0001
Acrolein	9.25E-05	0.0000
PAHs	1.68E-04	0.0000
		0.0008

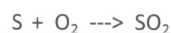
1 lb = 453.592 gm

1 br-hp = 0.7451 kW

1 hp-hr = 7,000 Btu, average

For SO₂, 15 ppm maximum sulfur content of fuel. Assume all sulfur converted to SO₂

Every mole of sulfur will create one mole of sulfur dioxide



29.9 gal fuel	15 lb S	mol S	mol SO ₂	64.066 lb SO ₂	0.0008961	lb/hr SO ₂
hr	10 ⁶ gal fuel	32.065 lb S	mol S	mol SO ₂		
from spec sheet	from NSPS	Assume all sulfur converted to SO ₂				

Greenhouse gases

CO ₂ EF (kg/MMBtu)	CH ₄ EF (kg/MMBtu)	N ₂ O EF (kg/MMBtu)	CO ₂ e (tpy)
73.96	0.003	0.0006	21.2 @ 500 hr/yr

Negligible SO₂ and GHG emissions

CONSTRUCTION PERMIT SUMMARY REPORT

Company Name: City of Bradford – City Hall File Number: 27-0239 EPS Initials: JEF

Permit Number(s): 968064P Source Point Number(s): 01

Application Received (date): 12/10/2013 Application Complete (date): 12/10/2013

Air Quality Analysis Performed? Yes ☐ No ☒

Briefly describe the project: (new source, modifications) (what the process is) (type controls proposed) (emissions expected, qualitative) (replacing what sources) (background information)

This is a new internal combustion diesel-fired engine (74.0 hp) used for an emergency generator. This emergency engine is subject to NSPS, **Subpart IIII**, Standards of Performance for Stationary Compression Ignition Internal Combustion Engines. Additionally, the engine will meet the engine MACT (40 CFR 63 Subpart ZZZZ) by meeting the NSPS requirements in subpart IIII. This is an area source of hazardous air pollutants.

The expected emissions from this source are PM, SO₂, CO, VOC, NO_x. Pollution control equipment is not proposed for this source.

Rules Analysis

Title V ☐ Cond. Major ☐ Minor ☒ Source category listed in 1200-03-09-.01(4)(b)1.(i)? Yes ☐ No ☒

Reason for PSD:	New source above ____ TPY	<input type="checkbox"/>	Sig. increase in ____ emissions	<input type="checkbox"/>	N/A <input checked="" type="checkbox"/>
Applicable NSPS:	40 CFR Part 60, Subpart <u>4I</u>	<input checked="" type="checkbox"/>	State Rule 1200-03-16-.	<input type="checkbox"/>	N/A <input checked="" type="checkbox"/>
Applicable NESHAP:	40 CFR Part 61, Subpart ____	<input type="checkbox"/>	State Rule 1200-03-11-.	<input type="checkbox"/>	N/A <input checked="" type="checkbox"/>
Applicable NESHAP:	40 CFR Part 63, Subpart <u>4Z</u>	<input checked="" type="checkbox"/>	State Rule 1200-03-31-.	<input type="checkbox"/>	N/A <input checked="" type="checkbox"/>

Other Applicable State Rules

TSP Emissions:	1200-03- <u>06</u> -. <u>02(2)</u>	<input checked="" type="checkbox"/> N/A <input type="checkbox"/>	NO _x Emissions:	1200-03- <u>07</u> -. <u>07(2)</u>	<input checked="" type="checkbox"/> N/A <input type="checkbox"/>
SO ₂ Emissions:	1200-03- <u>14</u> -. <u>03(5)</u>	<input checked="" type="checkbox"/> N/A <input type="checkbox"/>	____ Emissions:	1200-03-____ -. ____	<input type="checkbox"/> N/A <input type="checkbox"/>
CO Emissions:	1200-03- <u>07</u> -. <u>07(2)</u>	<input checked="" type="checkbox"/> N/A <input type="checkbox"/>	____ Emissions:	1200-03-____ -. ____	<input type="checkbox"/> N/A <input type="checkbox"/>
VOC Emissions:	1200-03- <u>07</u> -. <u>07(2)</u>	<input checked="" type="checkbox"/> N/A <input type="checkbox"/>	____ Emissions:	1200-03-____ -. ____	<input type="checkbox"/> N/A <input type="checkbox"/>

Visible Emissions from	<u>Source</u>	not to exceed	<u>20</u>	% opacity per Method	<u>9</u>	(Rule 1200-03- <u>05</u> -. <u>03(6)</u>)
Visible Emissions from	_____	not to exceed	_____	% opacity per Method	_____	(Rule 1200-03-____ -. ____)
Visible Emissions from	_____	not to exceed	_____	% opacity per Method	_____	(Rule 1200-03-____ -. ____)

Comments: _____

HEADER

The applicant is the City of Bradford (City Hall) with a mailing address of 216 E. Main Street, Bradford, TN 38316. They seek to obtain an air contaminant permit (Division identification number: 27-0239-01/68064) for an Electric Power Generator located at the same address. This proposed operation would consist of a diesel fuel-fired electric power generator and associated equipment used to provide emergency backup electric power for the city hall building. Because of the amount and type of emissions, the use of pollution control equipment is not proposed. There would be physical construction. Regulated air contaminants would be emitted by this source. Mr. E. King is the assigned Division person.

For the Gibson County "Milan Mirror-Exchange"-- publish once on or before Thursday, February 6, 2014.